

K & B Molding Tolerances Chart

Note: The Commercial values below represent common production tolerances at the most economical level. The Fine values represent closer tolerances that can be held, but at a greater cost. Manufacturer should be consulted for any addition of fillers, which will compromise physical properties and alter dimensional stability.

| Drawing Code | Dimensions (Inches) | Plus or Minus in Thousands of an Inch | | |
|--------------------------------------|----------------------------------------------------------------------|---------------------------------------|----------------------------------|-----------------------------------|
| | | Polycarbonate | Polypropylene | Thermoplastic Polyester |
| A = Diameter (See note #1) | 0.000 0.500 1.000 2.000 3.000 4.000 5.000 6.000 | | | |
| B = Depth (See note #3) | 6.000 to 12.000 - for each additional inch add (inches) | | | |
| C = Height (See note #3) | | Polycarbonate | Polypropylene | Thermoplastic Polyester |
| D = Bottom Wall | (See note #3) | Commercial± 0.004 Fine± 0.002 | Commercial± 0.006 Fine± 0.003 | Commercial± 0.002 Fine± 0.0015 |
| E = Side Wall | (See note #4) | Commercial± 0.005 Fine± 0.003 | Commercial± 0.006 Fine± 0.003 | Commercial± 0.002 Fine± 0.0015 |
| F = Hole Size Diameter (See note #1) | 0.000 to 0.125 | Commercial± 0.002 Fine± 0.001 | Commercial± 0.003 Fine± 0.002 | Commercial± 0.001 Fine± 0.0007 |
| | 0.126 to 0.250 | Commercial± 0.002 Fine± 0.002 | Commercial± 0.004 Fine± 0.003 | Commercial± 0.001 Fine± 0.0007 |
| | 0.251 to 0.500 | Commercial± 0.003 Fine± 0.002 | Commercial± 0.005 Fine± 0.004 | Commercial± 0.001 Fine± 0.0007 |
| | 0.501 & over | Commercial± 0.003 Fine± 0.002 | Commercial± 0.008 Fine± 0.006 | Commercial± 0.015 Fine± 0.001 |
| G = Hole Size Depth (See note #5) | 0.000 to 0.250 | Commercial± 0.002 Fine± 0.002 | Commercial± 0.005 Fine± 0.003 | Commercial± 0.001 Fine± 0.0007 |
| | 0.251 to 0.500 | Commercial± 0.003 Fine± 0.002 | Commercial± 0.006 Fine± 0.004 | Commercial± 0.001 Fine± 0.0007 |
| | 0.501 to 1.000 | Commercial± 0.004 Fine± 0.003 | Commercial± 0.009 Fine± 0.006 | Commercial± 0.015 Fine± 0.001 |
| H = Corners, Ribs, Fillets | (See note #6) | Commercial± 0.020 Fine± 0.015 | Commercial± 0.029 Fine± 0.016 | Commercial± 0.005 Fine± 0.005 |
| Flatness (See note #4) | 0.000 to 3.000 | Commercial± 0.005 Fine± 0.003 | Commercial± 0.022 Fine± 0.014 | Commercial± 0.006 Fine± 0.004 |
| | 3.001 to 6.000 | Commercial± 0.007 Fine± 0.004 | Commercial± 0.036 Fine± 0.021 | Commercial± 0.010 Fine± 0.006 |
| Thread Size (Class) | Internal | Commercial± 1B Fine± 2B | Commercial± 1 Fine± 2 | |
| | External | Commercial± 1A Fine± 2A | Commercial± 1 Fine± 2 | |
| Concentricity | (See note #4) (F.I.M) | Commercial± 0.005 Fine± 0.006 | Commercial± 0.015 Fine± 0.012 | |
| Draft Allowance Per Side | (See note #5, #8 for PC and TPPE) | Commercial± 1.5° Fine± 0.5° | Commercial± 1.5° Fine± 0.5° | Commercial± 0.5° Fine± 0.25° |
| Surface Finish | (See note #7) | | | |
| Color Stability | (See note #7) | | | |

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| Reference Notes: |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. These tolerances do not include allowance for aging characteristics of material. |
| 2. Tolerances are based on 0.125 inch wall section. |
| 3. Parting line must be taken into consideration. |
| 4. Part design should maintain a wall thickness as nearly constant as possible. Complete uniformity in this dimension is sometimes impossible to achieve. Walls of non-uniform thickness should be gradually blended from thick to thin. |
| 5. Care must be taken that the ratio of the depth of a cored hole to its diameter does not reach a point that will result in excessive pin damage. |
| 6. These values should be increased whenever compatible with desired design and good molding techniques. |
| 7. Customer-Molder understanding is necessary prior to tooling. |
| 8. (Thermoplastic Polyester) These values should be considered minimum. The designer should allow as much draft as is compatible with the design. Liberal use of draft will minimize ejection problems and reduce distortion from ejection. |
| 9. (Polycarbonate) This dimension is a function of mold design and construction. |
| 10. (Polycarbonate) Tolerances do not apply to screw threads, gear teeth or match fits. |
| 11. (Thermoplastic Polyester) This dimension is a function of mold design and construction. |
| 12. (Thermoplastic Polyester) These tolerances do not apply to screw threads, gear teeth or match fits. Provisions can usually be made to hold this type of dimension to close limits. |